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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,588	04/15/2004	Osamu Machida	H64-169096M/MNN	6643
21254	7590	02/21/2006	EXAMINER	
MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			PEGGINS, KRISTAL J	
		ART UNIT	PAPER NUMBER	
			2861	

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

8/6

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/824,588	MACHIDA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	K. Feggins	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3-5,7 and 8 is/are rejected.
- 7) Claim(s) 2 and 6 is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>5/20/2004</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: ____ .

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe et al. (US 2002/0174542 A1).

#### **Watanabe et al. disclose the following claimed limitations:**

\* regarding claim 1, an ink jet head (Abstract);

\* a chamber plate/side walls of element 3/ having a plurality of pressuring chambers/3/ formed therein for storing an ink (figs 1-2, para 0051-0052);

\* a vibrating plate/22/ bonded to the chamber plate/side walls of chamber, 3/;

\* a housing/7, 10 & 11/ having an ink flow path through which an ink is supplied into the pressuring chambers/3/ (fig 2);

\* an orifice/14/ through which an ink is ejected from the pressuring chambers/3/ (para 0051-0052, fig 2);

\* a longitudinal vibration mode piezoelectric element/23/ for generating pressure under which an ink droplet is ejected through the orifice/14/, wherein a thickness of the vibration plate/22/ is from 5μm to 10μm /1 to 7μm/ (para 0053-0055 & 0057, figs 1-2);

3. Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al. (US 6,945,632 B2).

**Nakamura et al. disclose the following:**

- \* regarding claim 5, an ink jet type droplet ejection device (Abstract),
  - an ink jet head/1/ (figs 1 & 2);
  - an ejection substrate disposed opposed to the ink jet head;
- \* a mechanism/carriage/ for moving one of the ink jet head and the ejection substrate/11/ with respect to the other (fig 1);
- \* wherein the ink jet head/1/ comprising a chamber plate/side walls of chamber/ having a plurality of pressuring chambers formed therein for storing an ink (figs 3 –11),
- \* a vibrating plate/31/ having a thickness of from 5 .mu.m to 10μm bonded to the chamber plate/side walls of chamber/ (col 10, lines 53-67, figs 3-11);
- \* a housing having an ink flow path through which an ink is supplied into the pressuring chambers (figs 3-11),
- \* an orifice/23/ through which an ink is ejected from the pressuring chambers and a longitudinal vibration mode piezoelectric element/32/ for generating pressure under which an ink droplet is ejected through the orifice (col 10, lines 53-67, figs 3-11).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 2002/0174542 A1) in view of Goto et al. (US 2003/0067525 A1).

**Watanabe et al. does not disclose the following:**

\* regarding claim 2, wherein a solution having a viscosity of from 5 to 25 mPa.s is ejected.

**Goto et al. disclose the following claimed limitations:**

\* regarding claim 2, wherein a solution having a viscosity of from 5 to 25 mPa.s/1 to 30mPa.s/ is ejected for the purpose of allowing a high quality image to be recorded with good coloring.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize a a solution having a viscosity of from 5 to 25 mPa.s/1 to 30mPa.s/ is ejected as taught by Nakamura et al. into Watanabe et al. (US 20020174542 A1) for the purpose of allowing a high quality image to be recorded with good coloring.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 2002/0174542 A1) in view of Iric et al. (US 2002/0180843 A1).

**Watanabe et al. (US 20020174542 A1) disclose all of the claimed limitations except for the following:**

\* regarding claim 3, wherein the vibration plate is formed by a metal.

**Iric et al. disclose the following:**

\* regarding claim 3, wherein the vibration plate is formed by a metal (para 0184) for the purpose of providing an inexpensive piezoelectric element having a high functionality.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize a vibration plate that is formed by a metal, as taught by Iric et al. into Watanabe et al for the purpose of providing an inexpensive piezoelectric element having a high functionality.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Nakamura et al. (US 6,945,632 B2) in view of Iric et al. (US 2002/0180843 A1).

**Nakamura et al. disclose all of the claimed limitations except for the following:**

\* regarding claim 7, wherein the vibration plate is formed by a metal.

**Iric et al. disclose the following:**

\* regarding claim 7, wherein the vibration plate is formed by a metal (para 0184) for the purpose of providing an inexpensive piezoelectric element having a high functionality.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize a vibration plate that is formed by a metal, as taught by Iric et al. into Makamura et al. for the purpose of providing an inexpensive piezoelectric element having a high functionality.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 6,945,632 B2) in view of Goto et al. (US 2003/0067525 A1).

**Nakamura et al. does not disclose the following:**

\* regarding claims 8, wherein a solution having a viscosity of from 5 to 25 mPa.s is ejected.

**Goto et al. disclose the following claimed limitations:**

\* regarding claims 8, wherein a solution having a viscosity of from 5 to 25 mPa.s/1 to 30mPa.s/ is ejected for the purpose of allowing a high quality image to be recorded with good coloring.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize a a solution having a viscosity of from 5 to 25 mPa.s/1 to 30mPa.s/ is ejected as taught by Nakamura et al. into Goto et al. for the purpose of allowing a high quality image to be recorded with good coloring.

***Allowable Subject Matter***

9. Claims 2 & 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Communication With The USPTO**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Feggins whose telephone number is 571-272-2254. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talbott Dave can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*K.F* — 2/07  
K. FEGGINS  
PRIMARY EXAMINER